



## **2018 Regional SO<sub>2</sub> Emissions and Milestone Report**

*Submitted March 2020*

### ***Wyoming***

Ryan Beavers  
Wyoming Department of Environmental Quality  
Air Quality Division  
200 West 17<sup>th</sup> Street, Suite 3  
Cheyenne, Wyoming 82002  
Phone: 307-777-6126  
Fax: 307-777-5616  
[ryan.beavers@wyo.gov](mailto:ryan.beavers@wyo.gov)

### ***Utah***

Jay Baker  
Utah Department of Environmental Quality  
Division of Air Quality  
195 North 1950 West  
Salt Lake City, UT 84114-4820  
Phone: 801-536-4015  
Fax: 801-536-0085  
[jbaker@utah.gov](mailto:jbaker@utah.gov)

### ***New Mexico***

Roslyn Higgin  
New Mexico Environment Department  
Air Quality Bureau  
525 Camino de los Marquez, Suite 1  
Santa Fe, NM 87505  
Phone: 505-476-4319  
Fax: 505-476-4375  
[Roslyn.higgin@state.nm.us](mailto:Roslyn.higgin@state.nm.us)

### ***Albuquerque-Bernalillo County***

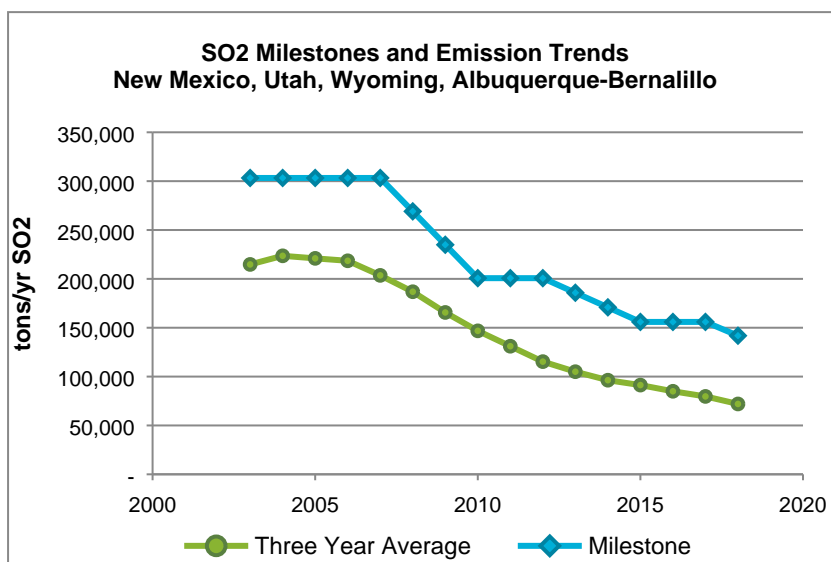
Ed Merta  
City of Albuquerque  
Environmental Health Department  
Air Quality Program  
P.O. Box 1293  
Albuquerque, NM 87103  
Phone: 505-768-2660  
Fax: 505-768-2617  
[emerta@cabq.gov](mailto:emerta@cabq.gov)

## 2018 Regional SO<sub>2</sub> Emissions and Milestone Report

### Executive Summary

Under Section 309 of the Federal Regional Haze Rule, nine western states, and tribes within those states, have the option of submitting plans to reduce regional haze emissions that impair visibility at 16 Class I areas on the Colorado Plateau. Five states – Arizona, New Mexico, Oregon, Utah, and Wyoming – and Albuquerque-Bernalillo County initially exercised this option by submitting plans to the Environmental Protection Agency (EPA) by December 31, 2003. Oregon elected to cease participation in the program in 2006 and Arizona elected to cease participation in 2010. The tribes were not subject to the deadline and still can opt into the program at any time. Under the Section 309 plans, the three participating states and Albuquerque-Bernalillo County have tracked the emissions of the applicable stationary sources as part of the pre-trigger portion of the SO<sub>2</sub> Milestone and Backstop Trading Program. The Western Regional Air Partnership (WRAP) is assisting these states and county with the implementation and management of the regional emission reduction program. As used in this document, “Section 309 states” means the states of New Mexico, Utah, and Wyoming and Albuquerque-Bernalillo County. (For CAA purposes, this report treats Albuquerque-Bernalillo County as a state because it has authority under federal and state law to administer the CAA separately from the rest of New Mexico).

As part of this program, the Section 309 states must submit an annual Regional Sulfur Dioxide (SO<sub>2</sub>) Emissions and Milestone Report that compares emissions to milestones. A milestone is a maximum level of annual emissions for a given year. The states submitted the first report in 2004 for the calendar year 2003. Over the course of the program, the states have consistently stayed below the milestones.



From 2003 to 2017 states compared the milestone to a three year average of SO<sub>2</sub> emissions as required by the states' SIPs. The states' SIPs require them to compare the final 2018 regional milestone to 2018 emissions rather than the three-year average. The regional milestone for 2018 is 141,849 tons. In this document the states report the 2018 adjusted emissions as required by Section 309 of the CAA. We compared the adjusted 2018 emissions to the 2018 milestone to determine whether the states met the milestone. The adjustments to reported

emissions were required to allow the basis of current emission estimates to be comparable to the emissions monitoring or calculation method used in the most recent base year inventory.

As presented in Table ES-1, the Section 309 states reported 62,754 tons of SO<sub>2</sub> emissions for the calendar year 2018. The total emissions increased to 71,994 of SO<sub>2</sub> after making adjustments to account for changes in monitoring, calculation methods, and enforcement actions. The adjustments result in an additional 9,241 tons of SO<sub>2</sub> emissions.

Based on this adjusted annual emissions estimate, the Section 309 states determined that emissions in 2018 were below the regional SO<sub>2</sub> milestone for 2018. The states' Section 309 plans contain provisions to adjust the milestones to account for enforcement actions (to reduce the milestones where an enforcement action identified that emissions in the baseline period were greater than allowable emissions). Based on emissions data received from the states and plan requirements regarding adjustments to the milestones, no enforcement action adjustment is required.

The plans also require that the annual report identify, first, changes in the total number of sources from year to year and, second, significant changes in a source's emissions from year to year. The significant emission changes from 2017 to 2018 are included in Section 6 of this report. A list of facilities added to, or removed from, the list of subject sources in the original base year inventories is included in Appendix B.

Table ES-1

Overview of 2018 Regional Milestones and Emissions for Section 309 Participating States

<b><u>2018 Sulfur Dioxide Milestones</u></b>	
Regional 2018 Milestone*	141,849 tons
Adjusted 2018 Milestone	141,849 tons
<b><u>2018 Sulfur Dioxide Emissions</u></b>	
Reported 2018 Emissions	62,754 tons
Adjustments**	
Emission Monitoring, Calculation Methods, and Enforcement Actions	9,241 tons
Adjusted 2018 Emissions (rounded number)	71,994 tons
<b><u>Comparison of Emissions to Milestone</u></b>	
2018 Adjusted Emissions	71,994 tons
Adjusted Three-State 2018 Milestone	141,849 tons
Difference (Negative Value = Emissions < Milestone)	-69,854 tons
2018 Emissions as Percent of 2018 Milestone	51%

\* See the Regional Milestones section of each state's 309 plan.

\*\* See the Annual Emissions Report section of each state's 309 plan.

## **2018 Regional SO<sub>2</sub> Emissions and Milestone Report**

### ***1.0 Introduction***

#### ***1.1 Background***

Under Section 309 of the Federal Regional Haze Rule (40 CFR Part 51), nine western states, and the tribes within those states, have the option of submitting State Implementation Plans (SIPs) to reduce regional haze emissions that impair visibility at 16 Class I areas on the Colorado Plateau. Five states — Arizona, New Mexico, Oregon, Utah, and Wyoming — and Albuquerque-Bernalillo County exercised this option by submitting SIPs to the EPA by December 1, 2003. In October 2006, when EPA modified Section 309, Oregon elected to cease participation in the SO<sub>2</sub> Milestone and Backstop Trading Program by not resubmitting a Section 309 SIP. In 2010, Arizona elected to cease participation in the program. The tribes were not subject to this deadline and still can opt into the program at any time.

Under the Section 309 SIPs, these three states and one local air agency have been tracking emissions under the pre-trigger requirements of the SO<sub>2</sub> Milestone and Backstop Trading Program since 2003. The Western Regional Air Partnership (WRAP) is assisting these states with the implementation and management of this regional emission reduction program.

Under the milestone phase of the program, Section 309 states have established annual SO<sub>2</sub> emissions targets (from 2003 to 2018). These voluntary emissions reduction targets represent reasonable progress in reducing emissions that contribute to regional haze. If the participating sources fail to meet the milestones through this voluntary program, then the states will trigger the backstop trading program and implement a regulatory emissions cap for the states, allocate emissions allowances (or credits) to the affected sources based on the emissions cap, and require the sources to hold sufficient allowances to cover their emissions each year.

This report is the sixteenth annual report for the milestone phase of this program. The report provides background on regional haze and the Section 309 program, the milestones established under the program, and the emissions reported for 2018. Based on the first fifteen years, the voluntary milestone phase of the program is meeting its reasonable progress targets, and emissions are well below the target levels.

#### **What is Regional Haze?**

Regional haze is air pollution that is transported long distances and reduces visibility in national parks and wilderness areas across the country. Over the years, this haze has reduced the visual range from 145 kilometers (90 miles) to 24 – 50 kilometers (15 – 31 miles) in the East, and from 225 kilometers (140 miles) to 56 – 145 kilometers (35 – 90 miles) in the West. The pollutants that create this haze are sulfates, nitrates, organic carbon, elemental carbon, and soil dust. Human-caused haze sources include industry, motor vehicles, agricultural and forestry burning, and windblown dust from roads and farming practices.

#### **What U.S. EPA Requirements Apply?**

In 1999, the EPA issued regulations to address regional haze in 156 national parks and wilderness areas across the country. EPA published these regulations in the Federal Register on

July 1, 1999 (64 FR 35714). The goal of the Regional Haze Rule (RHR) is to eliminate human-caused visibility impairment in national parks and wilderness areas across the country. It contains strategies to improve visibility over the next six decades, and requires states to adopt implementation plans.

The EPA's RHR provides two paths to address regional haze. One is 40 CFR 51.308 (Section 308), and requires most states to develop long-term strategies out to the year 2064. States must show that these strategies make "reasonable progress" in improving visibility in Class I areas inside the state and in neighboring jurisdictions. The other is 40 CFR 51.309 (Section 309), and is an option for nine states — Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, and Wyoming — and the 211 tribes located within these states to adopt regional haze strategies for the period from 2003 to 2018. These strategies are based on recommendations from the Grand Canyon Visibility Transport Commission (GCVTC) for protecting the 16 Class I areas on the Colorado Plateau. Adopting these strategies constitutes reasonable progress until 2018. These nine western states and tribes can also use the same strategies to protect the other Class I areas within their own jurisdictions.

The EPA revised the RHR on July 6, 2005 (70 FR 39104), and again on October 13, 2006 (71 FR 60612) in response to two legal challenges. The October 13, 2006 revisions modified Section 309 to provide a methodology consistent with the Court's decision for evaluating the equivalence of alternatives to Best Available Retrofit Technology (BART), such as the alternative Section 309 strategy based on the GCVTC recommendations.

#### How Have the WRAP States Responded to EPA Requirements?

Of the nine states, and tribes within those states, that have the option under Section 309 of participating in a regional strategy to reduce SO<sub>2</sub> emissions, five states originally submitted Section 309 SIPs to EPA. These states were Arizona, New Mexico, Oregon, Utah, and Wyoming. In addition, Albuquerque-Bernalillo County also submitted a Section 309 SIP. Due to legal challenges, EPA did not approve the initial SIP submittals. EPA did, however, fully approve the regional milestone and backstop trading program in 2012.

Oregon and Arizona have opted out of submitting a revised Section 309 SIP under the modified RHR, which leaves three participating states and Albuquerque-Bernalillo County. To date, no tribes have opted to participate under Section 309, and the other four states of the original nine opted to submit SIPs under Section 308 of the RHR.

The following summarizes SO<sub>2</sub> related elements of the Section 309 process for the participating Section 309 states:

1. Section 309(d)(4)(i) requires SO<sub>2</sub> milestones in the SIP and includes provisions for making adjustments to these milestones, if necessary. The milestones must provide for steady and continuing emission reductions through 2018 and greater reasonable progress than BART.
2. Section 309(d)(4)(iii) requires monitoring and reporting of stationary source SO<sub>2</sub> emissions in order to ensure the SO<sub>2</sub> milestones are met. The SIP must commit to reporting to the WRAP as well as to EPA.

3. Section 309(d)(4)(iv) requires that a SIP contain criteria and procedures for activating the trading program within five years if an annual milestone is exceeded. A Section 309 SIP must also provide for assessments of the state's progress in 2013 and 2018.

This report responds to Item 2, above, and provides the annual report that compares the 2018 emissions against the milestones for the states and city that have submitted Section 309 SIPs to EPA.

#### What Elements Must the Regional SO<sub>2</sub> Emissions and Milestone Report Contain?

To facilitate compliance with the Section 309 SIPs, the WRAP has committed to compiling a regional report on emissions for each year. In accordance with the SIPs, the WRAP will compile the individual state emission reports into a summary report that includes:

1. Reported regional SO<sub>2</sub> emissions (tons/year).
2. Adjustments to account for:
  - Changes in emissions monitoring or calculation methods; or
  - Enforcement actions or settlement agreements as a result of enforcement actions.
3. As applicable, average adjusted emissions for the last three years (which are compared to the regional milestone). Per requirements in the Section 309 SIPs, only 2018 emissions are used in the report.

#### How Is Compliance with the SO<sub>2</sub> Milestone Determined?

While the WRAP assists with the preparation of this report, each Section 309 state reviews the information in the report and proposes a draft determination that the regional SO<sub>2</sub> milestone is either met or exceeded for that year. Each state submits the draft determination for public review and comment, in accordance with its SIP, during the first part of 2020, culminating in a final report sent to EPA by March 31, 2020.

### ***1.2 Report Organization***

This report presents the regional SO<sub>2</sub> emissions and milestone information required by the 309 SIPs for the Section 309 states. The report is divided into the following sections, including two appendices:

- Reported SO<sub>2</sub> Emissions in 2018;
- Emissions Adjustments Related to Monitoring Methodology or Enforcement Actions;
- 2018 Adjusted Emissions;
- Enforcement Milestone Adjustments;
- Quality Assurance (Including Source Change Information);
- Milestone Determination;
- Appendix A -- Facility Emissions and Emissions Adjustments; and
- Appendix B -- Changes to SO<sub>2</sub> Emissions and Milestone Source Inventory.

### ***2.0 Reported SO<sub>2</sub> Emissions in 2018***

The Section 309 SIPs require all stationary sources with reported emissions of 100 tons or more per year in the year 2000, or any subsequent year, to report annual SO<sub>2</sub> emissions.

Table 1 summarizes the annual reported emissions from applicable sources in each state. The 2018 reported SO<sub>2</sub> emissions for each applicable source are in Appendix A, Table A-1.

Table 1. Reported 2018 SO<sub>2</sub> Emissions by State

State	Reported 2018 SO <sub>2</sub> Emissions (tons/year)
Albuquerque-Bernalillo	126
New Mexico	7,979
Utah	9,411
Wyoming	45,238
TOTAL	62,754

### ***3.0 Emissions Adjustments Related to Monitoring Methodology or Enforcement Actions***

The annual emissions reports for each state include proposed emissions adjustments to ensure consistent comparison of emissions to the milestone. Each state adjusted the reported emissions levels so that they are comparable to the levels that would result if the state used the same emissions monitoring or calculation method used in the base year inventory (2006). The net impact throughout the region, because of adjustments related to the monitoring methodology, is an increase of 1,236 tons from the reported 2018 emissions.

Utah adjusted the emissions from the Carbon Power Plant due to an enforcement action. As part of Utah's BART alternative for NO<sub>x</sub>, they required that the Carbon Power Plant shut down. Though there is an actual emissions reduction of 8,005 tons of SO<sub>2</sub> per year, the Utah Air Quality Board approved a Commitment SIP stating that the emissions reductions from the closure will not be counted for both the SO<sub>2</sub> Milestone program and the BART alternative controls. Therefore, an additional 8,005 tons of SO<sub>2</sub> are included in the calculations for this milestone report. Table 2 summarizes the emissions adjustments made for changes in monitoring methodology or enforcement actions.

Table 2. Adjustments for Changes in Monitoring Methodology or Enforcement Actions

State	Source	Reported 2018 SO <sub>2</sub> Emissions (tons)	Adjusted 2018 SO <sub>2</sub> Emissions (tons)	Monitoring Methodology Adjustment (tons)	Enforcement Action Adjustment (tons)	Description
ABQ	GCC Rio Grande Inc. - Portland Cement Manufacturer	126	33	93	--	Increase in the reported 2018 SO <sub>2</sub> emissions was based on actual stack test results and are more accurate in estimating SO <sub>2</sub> emissions compared to 2006 emissions calculation methodology. In 2015 old baghouses were replaced with new state of the art baghouses and a new stack was added. Old 2006 calculation methodology was based on emissions testing by taking physical measurements inside the old baghouses where emissions were vented through the baghouses' mono-vents. In 2006 there was no stack to conduct emissions testing.
UT	Chevron Products Co. -- Salt Lake Refinery	47	857	810	--	Increase in Adjusted SO <sub>2</sub> Emissions is due to a correction in the calculation of Adjusted SO <sub>2</sub> Emissions. The previous formula used to calculate SO <sub>2</sub> included flow meters and engineering judgment etc. The current formula for calculating now incorporates CEM data.
UT	Big West Oil Company - Flying J Refinery	65	211	146	--	Now using CEM data
UT	Holcim-Devil's Slide Plant	91	464	373	--	Facility changed emissions calculation methodology from stack tests to CEM.
UT	PacifiCorp -- Carbon Power Plant	0	8,005	--	8,005	An Utah Enforceable Commitment SIP resolves that SO <sub>2</sub> emissions reductions from the closure of the Carbon plant will not be counted as part of achieving the SO <sub>2</sub> Milestone and as part of the Alternative to BART SIP for NO <sub>x</sub> .



## **4.0 2018 Adjusted Emissions**

The SIPs require multi-year averaging of emissions from 2004 to 2017 for the milestone comparison. From 2005 to 2017, states compare a three-year average (which includes the reporting year and the two previous years) with the milestone. For this milestone report the SIPs require a comparison of 2018 emissions with the 2018 milestone. The adjusted emissions for 2018 are 71,994. The following report sections describe the adjusted milestone determination.

## **5.0 Enforcement Milestone Adjustments**

The SIPs require that each state report on proposed milestone adjustments due to enforcement actions, which affect baseline year emissions. The purpose of this adjustment is to remove emissions that occurred above the allowable level in the baseline year from the baseline and the annual milestones. The enforcement milestone adjustments require an EPA-approved SIP revision before taking effect. There were no proposed enforcement action related milestone adjustments reported for 2018.

## **6.0 Quality Assurance**

The states provided 2018 emissions data based on their state emissions inventories. States used additional quality assurance (QA) procedures for this report to supplement the normal QA procedures the states follow for their emissions inventories. First, each state submitted a source change report, and second, the states compared their inventory data for utility sources against 40 CFR Part 75 Acid Rain Program monitoring data.

### **6.1 Source Change Report**

The SIPs require that this annual SO<sub>2</sub> emissions and milestone report include a description of source changes or exceptions report to identify the following:

- Any new sources that were not contained in the previous calendar year's emissions report, and an explanation of why the sources are now included in the program.
- Identification of any sources that were included in the previous year's report and are no longer included in the program, and an explanation of why this change has occurred.
- An explanation for emissions variations at any applicable source that exceeds  $\pm 20\%$  from the previous year.

Table 3 provides explanations for the emissions variations from applicable sources from 2017 – 2018 that are greater than 20%. Plants with variations greater than 20%, but reported emissions of less than 20 tons in both 2017 and 2018, are not included in Table 3. Information on these plants is provided in Appendix A.

Appendix B provides a list of all sources added or removed from the program inventory in this and previous reporting years. Albuquerque-Bernalillo County added one source to this 2018 report.

Table 3. Sources with an Emissions Change of > ±20% from the Previous Year

State	County FIPS	State Facility Identifier	Plant Name	Reported 2017 SO <sub>2</sub> Emissions (tons)	Reported 2018 SO <sub>2</sub> Emissions (tons)	% Change	Description Change > ±20% 2017 to 2018
NM	15	350150011	DCP Midstream/Artesia Gas Plant	9	124	1328%	At Artesia plant, we have Acid Gas Injection Well (AGI) that all of compressed acid gas (high H <sub>2</sub> S/High CO <sub>2</sub> ) coming off of Amine unit is injected into. Whenever plant encounters unexpected malfunction event with the AGI system, the plant has to route the acid gas to the acid gas flare while the issue with AGI system is addressed. (H <sub>2</sub> S content of acid gas completely oxidizes to SO <sub>2</sub> when combusted)
NM	25	350250044	DCP Midstream/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	1,385	1,767	28%	The 28% increase in SO <sub>2</sub> emission for 2018 at Eunice Gas Plant, in comparison to 2017, is due to higher amount of H <sub>2</sub> S/overall volume processed at the facility. Also, based on the H <sub>2</sub> S content of the inlet gas to the plant and sulfur recovery efficiency of the SRU unit, the amount of sulfur content that remains in Tail Gas routed to TGI varies. And as explained in Artesia email, sulfur (H <sub>2</sub> S) oxidizes to SO <sub>2</sub> emission when burned (whether through a flare or an incinerator). In conclusion, SO <sub>2</sub> emission variability can be impacted by multiple factors but in the case of 2017 vs 2018, biggest contributing factor was sulfur content/volume processed at the facility (increase in operation).
NM	25	350250035	DCP Midstream/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	393	114	-71%	DCP implemented several projects in 2017 to achieve emission reductions and improved reliability. DCP worked with 3rd party power company to install dedicated electrical line to the Linam gas plant and a separate electrical line to the AGI site. This project nearly eliminated plant upsets associated with 3rd party power interruptions. Installed suction control valves on the inlet to the AGI compressors, improving reliability. Rewired all instrumentation and controls for AGI compressors.
NM	15	350150008	OXY USA WTP Limited Partnership - Indian Basin Gas Plant [Old Name - Marathon Oil/Indian Basin Gas Plant]	16	28	78%	The Plant's total SO <sub>2</sub> emissions increased from 15.78 tons in 2017 to 28.10 tons in 2018. This was mainly due to a scheduled maintenance performed on the acid gas compressor in May, 2018 which accounted for 16.37 tons of SO <sub>2</sub> .
NM	45	350450902	Public Service Co of New Mexico/San Juan Generating Station	4,535	1,247	-73%	The primary reason for the decrease is that two of the four units were permanently shut down at the end of 2017. In 2018, only two units remained in service and consequently, the tons of SO <sub>2</sub> emitted and reported were significantly less than in 2017.
NM	25	350250008	Regency Field Services/Jal #3 [Old Name Southern Union Gas] /Jal #3	207	1,444	597%	I did a review on the flaring events for 2017 and 2018. It looks like in early 2018 (January, March, and May) we had 9 major flaring events that lasted for several days each (the largest event lasting for 8 days), resulting in a large amount of SO <sub>2</sub> emissions.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2017 SO <sub>2</sub> Emissions (tons)	Reported 2018 SO <sub>2</sub> Emissions (tons)	% Change	Description Change > ±20% 2017 to 2018
NM	25	350250061	Versado Gas Processors, LLC / Monument Plant[Old name(s):TARGA MIDSTREAM SERVICES LP, WARREN PETROLEUM/MONUMENT PLANT]	1,007	406	-60%	In August of 2016, the Monument facility experienced an AGI well failure. As a result of the well failure, a new well had to be permitted and drilled. On August 8, 2016, the AGI well was shut down at Monument. A new well was permitted and drilled. On March 23, 2017, the new well was complete, with all equipment back in service, and injection began. During this time period, acid gas was flared continually to achieve maximum destruction efficiency from the flare. Therefore, from 2017 to 2018, a decrease in flared emissions contributed to an overall decrease in SO <sub>2</sub> emissions at Monument.
NM	25	350250063	Versado Gas Processors, LLC/Saunders Plant [Old name(s): TARGA MIDSTREAM SERVICES, LP,WARREN PETROLEUM/SAUNDERS PLANT]	568	256	-55%	From 2017 to 2018, a decrease in emissions from the thermal incinerator contributed to an overall decrease in SO <sub>2</sub> emissions at the Saunders facility. The SO <sub>2</sub> emissions decreased following a shutdown to replace the catalyst in the Sulfur Recovery Unit which resulted in higher SO <sub>2</sub> recoveries.
NM	31	350310032	Tri-State Gen & Transmission/Escalante Station	729	880	21%	There was an economic shutdown in 2017 that started in the middle of March and coming back online in early June. That is why there is a significant increase in 2018 compared to 2017.
NM	45	350450247	CCI San Juan, LLC /San Juan River Gas Plant	272	425	56%	The SO <sub>2</sub> increases were related more to the feed gas composition than to feed gas quantity. The plant began to process a new type of feed gas with higher CO <sub>2</sub> concentrations compared to typical historical feed gas compositions. The higher CO <sub>2</sub> concentrations in the feed gas contributed to the increased rate of acid gas flaring in 2017.This situation was resolved just prior to November 2018 and emissions have declined in late 2018 and 2019.
NM	25	350250113	ConocoPhillips-Midland Office / East Vacuum Liquid Recovery and CO <sub>2</sub> Plant	38	21	-45%	In 2017, ConocoPhillips commissioned an additional process Train (2) at the plant, and to sustain process reliability completed a maintenance turn-around. Flaring was required in 2017 to complete the commissioning and turn around when the plant was taken off line. Since completion of these efforts, the plant has experience over 90% process reliability with associated flared gas and SO <sub>2</sub> reductions.
UT	11	10119	Chevron Products Co. -- Salt Lake Refinery	32	47	45%	From 2017 to 2018 Western Canadian Select crude input increased from 10% to 14% This crude contains more sulfur than other crudes processed.
UT	11	10122	Big West Oil Company - Flying J Refinery	33	65	97%	Increase in SO <sub>2</sub> emissions is due to aligning emissions calculations with the RATA methodology which source believes to be more conservative.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2017 SO <sub>2</sub> Emissions (tons)	Reported 2018 SO <sub>2</sub> Emissions (tons)	% Change	Description Change > ±20% 2017 to 2018
UT	27	10313	Graymont Western US Inc. -- Cricket Mountain Plant	18	26	44%	The emission factor for 2017 was 2.0 lb/hr for SO <sub>2</sub> , while the 2018 SO <sub>2</sub> emission factor was 5.3 lb/hr. Given that the SO <sub>2</sub> emissions are largely fuel driven, it appears that sulfur in their coal increased during 2018 (Kiln 4 saw similar increases in the SO <sub>2</sub> emission factor, also supporting that the sulfur in coal was higher in 2018).
UT	29	10007	Holcim-Devil's Slide Plant	196	91	-54%	Decrease in SO <sub>2</sub> emissions which appears to be due to an decrease in the CEM value. In 2018, the plant did not use Pet Coke as a fuel. Use of one primary fuel in the fuel mix allows for better burnability of the fuel mix which most likely led to lower SO <sub>2</sub> emissions for the year.
UT	11	10123	Holly Refining and Marketing Co. -- Phillips Refinery	44	18	-59%	SO <sub>2</sub> values decreased due to lower CEMS values in 2018 as opposed to 2017. This was due to a reduced sulfur concentration in our fuel gas as measured by a continuous emission monitor (CEM).
UT	35	10572	Kennecott Utah Copper Corp. -- Power Plant/Lab/Tailings Impoundment	1,036	-	-100%	The UPP SO <sub>x</sub> emissions are lower in 2018 because the facility was operated in a care & maintenance mode while other power supply options were investigated for their impacts to facility costs. Care & maintenance operations do not require the use of coal as a fuel source, thus SO <sub>2</sub> emissions were less than years with normal power supply operations.
UT	35	10335	Tesoro West Coast -- Salt Lake City Refinery	499	43	-91%	Decrease in SO <sub>2</sub> emissions due to installation of Wet Gas Scrubber at the beginning of calendar year 2018.
WY	31	1	Basin Electric -- Laramie River Station	6,522	8,670	33%	Change in Calculation Method
WY	5	281	Black Hills Corporation - Wygen III	281	361	29%	Data Substituted from Acid Rain Program
WY	13	28	Burlington Resources -- Lost Cabin Gas Plant	1,209	1,632	35%	Higher emissions due to increased flare use caused by unplanned grid outages and then installation of a new incinerator
WY	41	9	Chevron USA -- Carter Creek Gas Plant	55	145	164%	The 2018 SO <sub>2</sub> emissions reflect a 163.81% increase due to a Plant Turnaround occurring in 2018 compared to the emissions in 2017
WY	37	48	Tronox Alkali Wymoiing Corporation -- Green River Sodium Products (Westvaco facility)	1,456	2,328	60%	Change due to increase in operation outs and higher average sulfur content coal
WY	23	1	Exxon Mobil Corporation -- Labarge Black Canyon Facility	25	19	-25%	Fewer equipment malfunctions compared to 2017
WY	23	13	Exxon Mobil Corporation -- Shute Creek	1,582	474	-70%	Multiple processes upsets in 2017 caused by extreme weather condition and unavoidable equipment malfunctions resulting in flaring from AGI and increased SO <sub>2</sub>

State	County FIPS	State Facility Identifier	Plant Name	Reported 2017 SO <sub>2</sub> Emissions (tons)	Reported 2018 SO <sub>2</sub> Emissions (tons)	% Change	Description Change > ±20% 2017 to 2018
WY	21	1	Holly Frontier Oil & Refining Company -- Cheyenne Refinery	250	306	22%	Higher emissions from Sulfur Incinerator upset events, higher emissions from coker upsets
WY	29	7	Marathon Oil Co -- Oregon Basin Gas Plant	227	303	34%	Higher Emissions due to turnaround being complete
WY	29	0010	Marathon Oil Co -- Oregon Basin Wellfield	49	222	349%	Higher Emissions due to turnaround being complete
WY	37	8	Merit Energy Company - Brady Gas Plant (formerly Anadarko E&P Co LP)	0	23	230900%	Increase due to flare use
WY	29		Merit Energy Company - Shoshone Unit Battery	18	-		Facility is does not have Chapter 14 requirements and was sending in data voluntarily. New owner has not decided to keep doing this
WY	29		Merit Energy Company - Frannie Unit Battery No 1	4	-		Facility is does not have Chapter 14 requirements and was sending in data voluntarily. New owner has not decided to keep doing this
WY	29		Merit Energy Company - Cody Battery	11	-		Facility is does not have Chapter 14 requirements and was sending in data voluntarily. New owner has not decided to keep doing this
WY	29		Merit Energy Company - Frannie 2 Battery	0	-		Facility is does not have Chapter 14 requirements and was sending in data voluntarily. New owner has not decided to keep doing this
WY	1	2	Mountain Cement Company -- Laramie Plant	162	128	-21%	Lower Kiln operating hours
WY	37	1002	Pacificorp -- Jim Bridger Plant	10,264	8,156	-21%	Reduction Caused by drop in operating hours
WY	7	1	Sinclair Oil Company -- Sinclair Refinery	77	148	91%	New Boiler Started up
WY	37	5	Solvay Chemicals -- Soda Ash Plant (Green River Facility)	33	70	115%	Change due to varying effectiveness of wet scrubbers in unit# 19
WY	1	5	University of Wyoming - Heat Plant	53	35	-34%	Lower Sulfur Coal Used
WY	56043	397	Washakie Midstream Services - Worland Gas Plant (WMS)	71	30	-57%	Less compressor maintenance needed because there were less equipment malfunctions and repairs needed.
WY	45	1	Wyoming Refining -- Newcastle Refinery	14	4	-69%	Decrease due to removal of emission units and a decrease in flaring events.

## 6.2 Part 75 Data

Federal Acid Rain Program emissions monitoring data (required by 40 CFR Part 75) were used to check reported power plant emissions.

Sources in the region subject to Part 75 emitted 65% of the region's reported emissions in 2018. We compared Acid Rain Program power plant emission data from EPA's Data and Maps website to plant totals reported by each state. The SIPs require the use of Part 75 methods for Part 75 sources. The reported emissions matched EPA's emission data with the exception of four sources. The sources whose reported emissions did not match EPA's data are in Table 4.

Table 4. Reported facility emissions that do not match information in the Acid Rain Database

State	Facility Name	Facility ID (ORISPL)	Year	2018 Acid Rain Database Emissions (tons SO <sub>2</sub> )	2018 Reported Emissions (tons SO <sub>2</sub> )
WY	Laramie River	6204	2018	6,436	8,670
WY	Naughton	4162	2018	4,141	4,143
WY	Neil Simpson II	7504	2018	403	402
WY	Wygen II	56319	2018	1,030	260

## 7.0 Milestone Determination

The Section 309 regional 2018 milestone is 141,849 tons SO<sub>2</sub>. The 2018 adjusted emissions are 79,709 tons SO<sub>2</sub>; therefore, the participating states have met the 141,849 tons SO<sub>2</sub> milestone.

## 8.0 Public Comments

New Mexico, Albuquerque-Bernalillo, Utah, and Wyoming each published a draft of this report for public review and comment. The draft was also available on the WRAP website.

[Any comments during the comment period will be summarized here.]

## Appendix A

Table A-1  
2018 Reported and Adjusted Emissions for Sources Subject to  
Section 309 -- Regional Haze Rule

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2018 SO <sub>2</sub> Emissions (tons)	Adjusted 2018 SO <sub>2</sub> Emissions (tons)	2018 General New Monitoring Calculation Method Adjustment (tons)
ABQ	1	3500100008		GCC Rio Grande Inc. - Portland Cement Manufacturer	3241	327310	126	33	93
NM	15	350150024		Agave Energy Co./Agave Dagger Draw Gas Plant	1311	21112	36.57	36.57	
NM	15	350150002		Frontier Field Services /Empire Abo Plant [Old name: Arco Permian/Empire Abo Plant; BP America Production]	1321	21113	76.9	76.9	
NM	15	350150011		DCP Midstream/Artesia Gas Plant	1321	211112	124.40	124.40	
NM	25	350250044		DCP Midstream/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	1321	21113	1,767	1,767	
NM	25	350250035		DCP Midstream/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	1321	21113	114	114	
NM	15	350150138		Duke -- Magnum/Pan Energy -- Burton Flats	1321	211112			
NM	15	350150285		Duke Energy/Dagger Draw Gas Plant	1321	211112			
NM	25	350250060		VERSADO GAS PROCESSORS, LP/Eunice Gas Plant [Old name: WARREN PETROLEUM/EUNICE GAS PLANT]	1321	21113	76	76	
NM	25	350250004		Frontier Field Services/Maljamar Gas Plant	1321	21113	94	94	
NM	31	350310008		Western Refining Southwest Inc-Gallup Refinery {Old names: Western Refinery/Ciniza Refinery (Gallup) and GIANT REFINING/CINIZA}	2911	236220	52	52	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2018 SO <sub>2</sub> Emissions (tons)	Adjusted 2018 SO <sub>2</sub> Emissions (tons)	2018 General New Monitoring Calculation Method Adjustment (tons)
NM	25	350250007		Davis Gas Processing/Denton Plant	1311	21113	740	740	
NM	15	350150008		OXY USA WTP Limited Partnership - Indian Basin Gas Plant [Old Name -Marathon Oil/Indian Basin Gas Plant]	1321	211112	28	28	
NM	15	350150010		Navajo Refining Co/Artesia Refinery	2911	32411	51	51	
NM	45	350450902	2451	Public Service Co of New Mexico/San Juan Generating Station	4911	221112	1,247	1,247	
NM	7	350070001		Raton Pub. Service/Raton Power Plant	4911	221112			
NM	25	350250008		Regency Field Services/Jal #3 [Old Name Southern Union Gas] /Jal #3	1321	21113	1,444	1,444	
NM	25	350250051		Versado Gas Processors, LP/Eunice South Gas Plant	1321	211112			
NM	25	350250061		Versado Gas Processors, LLC / Monument Plant[Old name(s):TARGA MIDSTREAM SERVICES LP, WARREN PETROLEUM/MONUMENT PLANT]	1321	21113	406	406	
NM	25	350250063		Versado Gas Processors, LLC/Saunders Plant [Old name(s): TARGA MIDSTREAM SERVICES, LP,WARREN PETROLEUM/SAUNDERS PLANT]	1321	21113	256	256	
NM	31	350310032	87	Tri-State Gen & Transmission/Escalante Station	4911	221112	880	880	
NM	45	350450247		CCI San Juan, LLC /San Juan River Gas Plant	1321	21113	425	425	
NM	45	350450023		Western Refining Southwest Inc./Bloomfield Products Terminal [Old name: GIANT INDUSTRIES/BLOOMFIELD REF]	2911	42471	0.15	0.15	
NM	25	350250075		ConocoPhillips-Midland Office / MCA Tank Battery No. 2	1311	21113	140	140	
NM	25	350250113		ConocoPhillips-Midland Office / East Vacuum Liquid Recovery and CO2 Plant	1311	21112	21	21	
UT	49	10790		Brigham Young University -- Main Campus	8221	611310	0	0	



State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2018 SO <sub>2</sub> Emissions (tons)	Adjusted 2018 SO <sub>2</sub> Emissions (tons)	2018 General New Monitoring Calculation Method Adjustment (tons)
UT	11	10119		Chevron Products Co. -- Salt Lake Refinery	2911	324110	47	857	810
UT	11	10122		Big West Oil Company - Flying J Refinery	2911	324110	65	211	146
UT	27	10313		Graymont Western US Inc. -- Cricket Mountain Plant	1422	212312	26	26	
UT	29	10007		Holcim-Devil's Slide Plant	3241	327310	91	464	373
UT	11	10123		Holly Refining and Marketing Co. -- Phillips Refinery	2911	324110	18	18	
UT	27	10327	6481	Intermountain Power Service Corporation -- Intermountain Generation Station	4911	221112	2,485	2,485	
UT	35	10572		Kennecott Utah Copper Corp. -- Power Plant/Lab/Tailings Impoundment	1021	212234	0	0	
UT	35	10346		Kennecott Utah Copper Corp. -- Smelter & Refinery	3331	331411	689	689	
UT	27	10311		Materion Natural resources - Delta Mill (was Brush Resources)	1099	212299	0	0	
UT	7	10081	3644	PacifiCorp -- Carbon Power Plant	4911	221112	0	8,005	8,005
UT	15	10237	6165	PacifiCorp -- Hunter Power Plant	4911	221112	3,133	3,133	
UT	15	10238	8069	PacifiCorp -- Huntington Power Plant	4911	221112	2,202	2,202	
UT	37	10034		Paradox Midstream, LLC (was CCI Paradox Midstream LLC and Patara Midstream LLC and EnCana Oil & Gas (USA) Incorporated and Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	2911	211111	0	0	
UT	7	10096		Sunnyside Cogeneration Associates -- Sunnyside Cogeneration Facility	4911	221112	472	472	
UT	35	10335		Tesoro West Coast -- Salt Lake City Refinery	2911	324110	43	43	
UT	43	10676		Utelite Corporation -- Shale processing	3295	212399	140	140	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2018 SO <sub>2</sub> Emissions (tons)	Adjusted 2018 SO <sub>2</sub> Emissions (tons)	2018 General New Monitoring Calculation Method Adjustment (tons)
WY	11	2		American Colloid Mineral Co -- Colony East & West Plants	1459	212325	99	99	
WY	5	45	56609	Basin Electric -- Dry Fork Station	4911	22112	923	923	
WY	31	1	6204	Basin Electric -- Laramie River Station	4911	221112	8,670	8,670	
WY	3	12		Big Horn Gas Proc -- Big Horn/Byron Gas Plant	1311	22121			
WY	5	2	4150	Black Hills Corporation - Neil Simpson I	4911	22112			
WY	5	63	7504	Black Hills Corporation - Neil Simpson II	4911	22112	402	402	
WY	45	5	4151	Black Hills Corporation - Osage Plant	4911	22112			
WY	5	146	55479	Black Hills Corporation - Wygen 1	4911	22112	430	430	
WY	5	281	56596	Black Hills Corporation - Wygen III	4911	221112	361	361	
WY	13	0009		Burlington Resources -- Bighorn Wells	1300	21111			
WY	13	28		Burlington Resources -- Lost Cabin Gas Plant	1311	211111	1,632	1,632	
WY	41	9		Chevron USA -- Carter Creek Gas Plant	1311	211111	145	145	
WY	37	0177		Chevron USA -- Table Rock Field	1300	21111			
WY	37	14		Chevron USA -- Table Rock Gas Plant (Formerly Anadarko E&P Co LP)	1321	211111			
WY	41	0008		Chevron USA -- Whitney Canyon/Carter Creek Wellfield	1300	21111			
WY	5	225	56319	Cheyenne Light Fuel and Power Company -- Wygen II	4911	22112	260	260	
WY	37	48		Tronox Alkali Wymoing Corporation -- Green River Sodium Products (Westvaco facility)	2812	327999	2,328	2,328	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2018 SO <sub>2</sub> Emissions (tons)	Adjusted 2018 SO <sub>2</sub> Emissions (tons)	2018 General New Monitoring Calculation Method Adjustment (tons)
WY	13	0007		Devon Energy Production Co., L.P. -- Beaver Creek Gas Field	1300	21111			
WY	13	8		Devon Gas Services, L.P. -- Beaver Creek Gas Plant	1311	211111	0	0	
WY	23	1		Exxon Mobil Corporation -- Labarge Black Canyon Facility	1300	21111	19	19	
WY	23	13		Exxon Mobil Corporation -- Shute Creek	1311	211111	474	474	
WY	43	3		Hiland Partners, LLC -- Hiland Gas Plant	1321	48621			
WY	21	1		Holly Frontier Oil & Refining Company -- Cheyenne Refinery	2911	32411	306	306	
WY	29	7		Marathon Oil Co -- Oregon Basin Gas Plant	1321	211112	303	303	
WY	29	0010		Marathon Oil Co -- Oregon Basin Wellfield	1300	21111	222	222	
WY	37	8		Merit Energy Company - Brady Gas Plant (formerly Anadarko E&P Co LP)	1321	211112	23	23	
WY	29			Merit Energy Company - Shoshone Unit Battery		211112	-	-	
WY	29			Merit Energy Company - Frannie Unit Battery No 1		211112	-	-	
WY	29			Merit Energy Company - Cody Battery		211112	-	-	
WY	29			Merit Energy Company - Frannie 2 Battery		211112	-	-	
WY	41	0002		Merit Energy Company -- Whitney Canyon WellField	1300	21111	-	-	
WY	41	12		Merit Energy Company -- Whitney Facility	1311	211111	1	1	
WY	1	2		Mountain Cement Company -- Laramie Plant	3241	23571	128	128	
WY	37	3		P4 Production, L.L.C. -- Rock Springs Coal Calcining Plant	3312	331111	743.1	743.1	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2018 SO <sub>2</sub> Emissions (tons)	Adjusted 2018 SO <sub>2</sub> Emissions (tons)	2018 General New Monitoring Calculation Method Adjustment (tons)
WY	9	1	4158	Pacificorp - Dave Johnston Plant	4911	221112	6,983	6,983	
WY	37	1002	8066	Pacificorp -- Jim Bridger Plant	4911	221112	8,156	8,156	
WY	23	4	4162	Pacificorp -- Naughton Plant	4911	221112	4,143	4,143	
WY	5	46	6101	Pacificorp -- Wyodak Plant	4911	221112	2,163	2,163	
WY	37	22		Simplot Phosphates LLC -- Rock Springs Plant	2874	325312	1,159	1,159	
WY	7	1		Sinclair Oil Company -- Sinclair Refinery	2911	32411	148	148	
WY	25	5		Sinclair Wyoming Refining Company -- Casper Refinery	2911	32411	164	164	
WY	37	5		Solvay Chemicals -- Soda Ash Plant (Green River Facility)	1474	325181	70	70	
WY	37	2		TATA Chemicals (Soda Ash Partners)-- Green River Plant (formerly General Chemical)	1474	327999	3917	3917	
WY	15	1		The Western Sugar Cooperative -- Torrington Plant	2063	311313	7	7	
WY	37	49		Tronox Alkali Wyoming Corporation -- Granger Soda Ash Plant	1474	212391	218	218	
WY	1	5		University of Wyoming - Heat Plant	8221	61131	35	35	
WY	29	12		Vanguard Operating, LLC -- Elk Basin Gas Plant	1311	211111	572	572	
WY	56043	397		Washakie Midstream Services - Worland Gas Plant (WMS)	1321	211112	30	30	
WY	45	1		Wyoming Refining -- Newcastle Refinery	2911	32411	4	4	

## Appendix B

Table B-1  
Sources Added to the SO<sub>2</sub> Emissions and Milestone Report Inventory

State	County FIP Code	State Facility ID	Facility Name	Report Year of Change
UT	043	10676	Utelite Corporation -- Shale processing	2003
WY	011	0002	American Colloid Mineral Company -- East Colony	2003
WY	011	0003	American Colloid Mineral Company -- West Colony	2003
WY	037	0014	Chevron USA (previously owned by Anadarko E&P Company LP) -- Table Rock Gas Plant	2003
WY	005	0146	Black Hills Corporation -- Wygen 1	2003
WY	041	0002	BP America Production Company -- Whitney Canyon Well Field	2003
WY	013	0009	Burlington Resources -- Bighorn Wells	2003
WY	037	0177	Chevron USA -- Table Rock Field	2003
WY	041	0008	Chevron USA -- Whitney Canyon/Carter Creek Well field	2003
WY	013	0008	Devon Energy Corp. -- Beaver Creek Gas Plant	2003
WY	035	0001	Exxon Mobil Corporation -- Labarge Black Canyon Facility (also identified as Black Canyon Dehy Facility)	2003
WY	013	0007	Devon Energy Corp. -- Beaver Creek Gas Field	2004
WY	005	0225	Cheyenne Light, Fuel and Power (a subsidiary of Black Hills Corporation) -- Wygen II	2008
WY	005	0281	Black Hills Corporation -- Wygen III	2010
WY	005	0045	Basin Electric -- Dry Fork Station	2011
NM	025	350250075	ConocoPhillips-Midland Office / MCA Tank Battery No. 2	2013
NM	025	350250113	ConocoPhillips-Midland Office / East Vacuum Liquid Recovery and CO2 Plant	2013
ABQ* NM	001	3500100008	GCC Rio Grande Inc. - Portland Cement Manufacturer	2018

\* ABQ NM means Albuquerque-Bernalillo County.

Table B-2  
Sources Removed from the SO<sub>2</sub> Emissions and Milestone Report Inventory

State	County FIP Code	State Facility ID	Facility Name	1998 Baseline Emissions (tons/year)	Reason for Change	Report Year of Change
WY	043	0001	Western Sugar Company -- Worland	154	Emissions did not meet 100 TPY program criteria.	2003
WY	017	0006	KCS Mountain Resources -- Golden Eagle	942	Emissions did not meet 100 TPY program criteria.	2003
WY	003	0017	KCS Mountain Resources -- Ainsworth	845	Closed since 2000.	2003
WY	017	0002	Marathon Oil -- Mill Iron	260	Emissions did not meet 100 TPY program criteria.	2003
UT	049	10796	Geneva Steel -- Steel Manufacturing Facility	881	Plant is shut down and disassembled.	2004
WY	023	0001	Astaris Production -- Coking Plant	1,454	Plant is permanently shut down and dismantled.	2004
ABQ* NM	001	00008	GCC Rio Grande Cement	1,103	Not subject to program after baseline revisions.**	2008
ABQ NM	001	00145	Southside Water Reclamation Plant	120	Not subject to program after baseline revisions.**	2008
NM	023	350230003	Phelps Dodge Hidalgo Smelter	16,000	Facility is permanently closed.	2008
NM	017	350170001	Phelps Dodge Hurley Smelter/Concentrator	22,000	Facility is permanently closed.	2008
WY	003	00012	Big Horn Gas Processing -- Bighorn/Byron Gas Plant	605	Facility is permanently closed and dismantled.	2011

\* ABQ NM means Albuquerque-Bernalillo County.

\*\* 1998 baseline emissions were based on the facilities' potential to emit (PTE), and not actual emissions. Actual annual emissions have always been below 100 tons. Once the year 2006 baseline became effective, these facilities were removed from the inventory.